ATTACHMENT A

OK TO ENTER: /A.P./

AMENDMENTS TO THE CLAIMS

Please amend Claims 23, 31, 42 and 44 and cancel Claims 24, 33, 35 and 41 as indicated below:

Claims 1-22 (**Canceled**).

23. (**Currently amended**): A method for controlling battery power comprising the acts of:

~~selectively providing a first external power source or a second external power source to a device coupled to a system power terminal;~~

coupling a first input terminal to a system power terminal, wherein the first input terminal is configured to receive power from an AC adapter;

coupling a second input terminal in series with a current sensing circuit to the system power terminal, wherein the second input terminal is configured to receive power from a USB interface;

coupling a portable electronic device to the system power terminal, wherein the portable electronic device is powered by the AC adapter when the AC adapter is connected to the first input terminal, by the USB interface when the USB interface is connected to the second input terminal and the AC adapter is not connected to the first input terminal, and by an internal battery when the AC adapter is not connected to the first input terminal and the USB interface is not connected to the second input terminal;

coupling ~~an~~ the internal battery to the system power terminal via a series-connected bi-directional transistor, wherein the bi-directional transistor comprises a first terminal connected to the system power terminal, a second terminal connected to a positive terminal of the internal battery, a configurable body terminal and a control terminal;

comparing a voltage at the system power terminal with a voltage at the positive terminal of the internal battery to control connection of the configurable body terminal, wherein the configurable body terminal is connected to the first terminal when the system power terminal has a higher voltage than the positive

terminal of the internal battery and connected to the second terminal when the positive terminal of the internal battery has a higher voltage than the system power terminal;

sensing a voltage difference between the system power terminal and the positive terminal of the internal battery;

generating a feedback control signal based on the voltage difference and a voltage level at the control terminal of the bi-directional transistor;

~~translating the feedback control signal into~~ generating a linearly adjustable voltage for driving the bi-directional transistor based on the feedback control signal;

determining a charging mode of operation when the voltage difference indicates that the system power terminal has a higher voltage than the positive terminal of the internal battery by a first predefined amount;

charging the internal battery by linearly regulating the bi-directional transistor with the linearly adjustable voltage at the control terminal of the bi-directional transistor to conduct a charging current in a first direction from the system power terminal to the positive terminal of the internal battery during the charging mode;

using the current sensing circuit to measure current provided by the USB interface and to generate an overriding signal to reduce the charging current in response to an increase in a load current provided to the portable electronic device such that the measured current from the USB interface does not exceed a predetermined current threshold, wherein the overriding signal replaces the feedback control signal to generate the linearly adjustable voltage for driving the bi-directional transistor when the measured current from the USB interface exceeds the predetermine current threshold, and the current sensing circuit does not measure current provided by the AC adapter to generate the overriding signal when the AC adapter is connected to the first input terminal;

determining a discharging mode of operation when the voltage difference indicates that the system power terminal has a lower voltage than the positive terminal of the internal battery by a second predefined amount; and

discharging the internal battery by linearly regulating the bi-directional transistor with the linearly adjustable voltage at the control terminal of the bi-directional transistor to conduct a discharging current in a second direction from the positive terminal of the internal battery to the system power terminal during the discharging mode, wherein the level of current provided to the internal battery during the charging mode or current supplied by the internal battery during the discharging mode varies with the level of the linearly adjustable voltage at the control terminal of the bi-directional transistor.

24. (**Canceled**).

25. (**Original**): The method of Claim 23, wherein the impedance of the bi-directional transistor varies to limit the level of the charging current or the discharging current.

26. (**Original**): The method of Claim 23, wherein the impedance of the bi-directional transistor varies inversely with the discharging current level during the discharging mode.

27. (**Canceled**).

28. (**Canceled**).

29. (**Original**): The method of Claim 23, wherein the discharging mode occurs in response to a discharge command.

30. (**Canceled**).

31. (**Currently amended**): A method of controlling battery power, the method comprising:

selectively providing an external primary power source and an external secondary power source to a system power terminal of a device with an internal

battery, wherein the external primary power source is an AC adapter and the external secondary power source is a USB interface;

coupling the internal battery to the system power terminal using a bi-directional transistor with a control terminal, a first terminal connected to the system power terminal, a second terminal connected to the internal battery, and a configurable body contact that is connected to the system power terminal during a charging mode and connected to the internal battery during a discharging mode;

generating a feedback control signal based on a voltage at the control terminal of the bi-directional transistor and a voltage difference between the system power terminal and a positive terminal of the internal battery;

determining whether the bi-directional transistor operates in the charging mode or the discharging mode based on the voltage difference between the system power terminal and the positive terminal of the internal battery;

generating a linearly adjustable voltage based on the feedback control signal; ~~and~~

driving the control terminal of the bi-directional transistor with the linearly adjustable voltage to regulate current conducted by the bi-directional transistor to charge the internal battery during the charging mode and to discharge the internal battery during the discharging mode, wherein the level of current provided to the internal battery during the charging mode or current supplied by the internal battery during the discharging mode is determined by the level of the linearly adjustable voltage at the control terminal of the bi-directional transistor; and

sensing current provided by the USB interface to generate an overriding signal to reduce current provided to the internal battery during the charging mode in response to an increase in current provided to the device such that a total current provided by the USB interface does not exceed a predetermined level.

, wherein the current provided by the AC adapter is not sensed and is not used to generate any overriding signal when the AC adapter is providing power to the system power terminal.

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32. (**Previously presented**): The method of Claim 31, wherein the bi-directional transistor disconnects the internal battery from the system power terminal during a sleep mode.

33. (**Canceled**).

34. (**Previously presented**): The method of Claim 31, wherein the external secondary power source is automatically disconnected when the external primary power source is connected.

35. (**Canceled**).

36. (**Previously presented**): The method of Claim 31, wherein the bi-directional transistor is a field effect transistor and the control terminal is a gate terminal.

37. (**Previously presented**): The method of Claim 31, wherein the bi-directional transistor is a P-channel MOSFET.

38. (**Previously presented**): The method of Claim 37, further comprising using a comparator with inputs coupled across the bi-directional transistor to sense a voltage polarity of the bi-directional transistor and an output to control connections for the configurable body contact.

39. (**Previously presented**): The method of Claim 37, wherein the configurable body contact connects to a channel terminal with a relatively higher voltage during a shutdown mode to prevent current flow in a body diode and thereby fully disconnecting the internal battery from the system power terminal.

40. (**Previously presented**): The method of Claim 23, wherein the bi-directional transistor fully disconnects the internal battery from the system power terminal during a disable mode.

41. (**Canceled**).

42. (**Currently amended**): The method of Claim ~~41~~23, wherein the ~~reference~~ predetermined current ~~level~~ threshold is selectable from at least two different values.

43. (**Previously presented**): The method of Claim 23, wherein the bi-directional transistor is a P-channel MOSFET.

44. (**Currently amended**): A method for controlling battery power, the method comprising the acts of:

selectively providing power from an AC adapter and a USB interface to a system power terminal of an electronic device;

coupling a battery to [[a]] the system power terminal via a series-connected bi-directional transistor, wherein the bi-directional transistor comprises a first terminal connected to the system power terminal, a second terminal connected to the battery, a control terminal, and a configurable body contact that is connected to the system power terminal during a charging mode and connected to the battery during a discharging mode;

detecting a voltage difference between the system power terminal and a positive terminal of the battery;

generating a feedback control signal based on the voltage difference and a voltage at the control terminal of the bi-directional transistor;

generating a linearly variable voltage based on the feedback control signal to drive the bi-directional transistor;

applying the linearly variable voltage to the control terminal of the bi-directional transistor to charge or to discharge the battery, wherein the voltage difference between the system power terminal and the positive terminal of the battery determines whether the bi-directional transistor operates in the charging mode or the discharging mode, and the feedback control signal determines the level of current conducted by the bi-directional transistor; and

sensing current provided by the USB interface to vary a charging current provided to the battery during the charging mode in response to changes in a load current for the electronic device such that a total current provided by the USB interface does not exceed a predetermined current limit, wherein the

charging current is not varied in response to changes in the load current when the AC adapter is selected to provide power to the system power terminal.

45. (**Previously presented**): The method of Claim 44, further comprising coupling a switching diode across the bi-directional transistor to improve battery response during the discharging mode, wherein the switching diode has an anode coupled to the battery and a cathode coupled to the system power terminal.

, and wherein during that time when the AC adapter is selected to provide power, the current provided by the AC adapter is not sensed and is not used to vary a charging current in response to changes in a load current.

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